

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

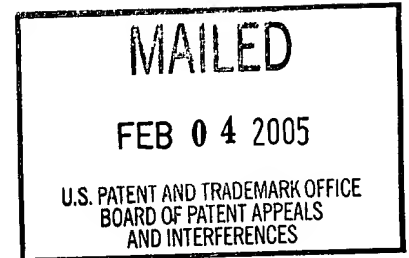
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte VERONIQUE DOUIN, BENEDICTE CAZIN,
JEAN-THIERRY SIMONNET, and ODILE AUBRUN

Appeal No. 2004-2205
Application No. 09/766,403

HEARD January 13, 2005



Before MILLS, GRIMES, and GREEN, Administrative Patent Judges.

GRIMES, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-9, 11-21, 23-25, 30, 33, 50, 51, and 55-84, all of the claims remaining. Claims 1, 71, 73, 75, 79, and 80 are representative and read as follows:

1. An oil-in-water nanoemulsion comprising oil globules with an average size of less than 150nm comprising at least one oil, at least one amphiphilic lipid, and at least one nonionic polymer comprising at least one hydrophobic block and at least one hydrophilic block.
71. A composition for caring for a keratin material chosen from body skin, facial skin, mucous membranes, the scalp, the hair, the nails, the eyelashes, and the eyebrows comprising a nanoemulsion comprising oil globules with an average size of less than 150nm comprising at least one oil, at least one amphiphilic lipid, and at least one nonionic polymer

comprising at least one hydrophobic block and at least one hydrophilic block.

73. A cosmetic make up composition for a keratin material chosen from body skin, facial skin, mucous membranes, the scalp, the hair, the nails, the eyelashes, the eyebrows comprising a nanoemulsion comprising oil globules with an average size of less than 150nm comprising at least one oil, at least one amphiphilic lipid, and at least one nonionic polymer comprising at least one hydrophobic block and at least one hydrophilic block.
75. A non-therapeutic care process for a keratin material comprising applying to said keratin material a nanoemulsion comprising oil globules with an average size of less than 150 nm and comprising at least one oil, at least one amphiphilic lipid, and at least one nonionic polymer comprising at least one hydrophobic block and at least one hydrophilic block.
79. A process for thickening oil-in-water nanoemulsions comprising including at least one nonionic polymer comprising at least one hydrophobic block and at least one hydrophilic block in said nanoemulsions comprising oil globules with an average size of less than 150nm and comprising at least one oil and at least one amphiphilic lipid.
80. An oil-in-water nanoemulsion comprising oil globules with an average size of less than 150nm comprising at least one oil phase, at least one amphiphilic lipid, and at least one nonionic polymer comprising at least one hydrophobic block and at least one hydrophilic block.

The examiner relies on the following references:

Cervantes et al. (Cervantes)	5,925,341	Jul. 20, 1999
Casperson et al. (Casperson)	WO 99/36047	Jul. 22, 1999

Claims 1-9, 11-21, 23-25, 30, 33, 50, 51, and 55-84 stand rejected under 35

U.S.C. § 103 as obvious in view of Cervantes and Casperson.

We affirm.

Background

"Oil-in-water emulsions are well known in the cosmetic and dermatopharmaceutical field particularly for the preparation of cosmetic products such as lotions, tonics,

serums, and toilet water.” Cervantes, column 1. “The term ‘nanoemulsion’ means a metastable oil-in-water emulsion . . . whose oil globule size is less than 150 nm, these oil globules being stabilized with a crown of amphiphilic lipids. . . . The transparency of these emulsions derives from the small size of the oil globules.” Specification, page 1.

The prior art “disclose[d] nanoemulsions based on fluid nonionic amphiphilic lipids and on silicone surfactants. However, all these nanoemulsions are fluid. For certain uses, products are sought which can be measured out and taken up easily by hand. To do this, these products must have a certain level of consistency or viscosity.” Id., pages 2-3. “It is known practice to use, as thickeners for aqueous media, water-soluble or water-dispersible polymers . . . such as carbopol, wherein said polymers can have a long chain length and a high molecular weight. When such polymers are used in compositions in the form of nanoemulsions, some of such nanoemulsions may tend to exhibit a decrease in at least one characteristic, such as stability and transparency.”

Page 3.

The specification discloses that “oil-in-water nanoemulsions comprising oil globules with an average size of less than 150nm comprising at least one oil and at least one amphiphilic lipid can be thickened with at least one nonionic polymer.” Page 3. In a working example, the specification reports that an oil-in-water nanoemulsion containing a nonionic polymer (“Aculyn 46 from Rohm & Haas”) was stable on storage for two months at room temperature and at 45°C, and had a turbidity of 318 NTU and a viscosity of 1300 mPa·s. See page 54. By contrast, if the Aculyn 46 was replaced with

roughly the same amount¹ of “Carbopol Ultrez, a composition which is not thickened, not transparent (turbidity > 1000 NTU) and not stable on storage is obtained.” Id.

Discussion

Appellants have grouped the claims into six groups. See the Appeal Brief, page 4. We will consider claims 1, 71, 73, 75, 79, and 80 as representative. 37 CFR § 1.192(c)(7).

1. Claims 1-9, 11-21, 23-25, 30, 33, 50, 51, and 55-69

Claim 1 is representative of Appellants' first group of claims. Claim 1 is directed to an oil-in-water nanoemulsion (i.e., an emulsion in which the oil globules have an average size of less than 150 nm), comprising an oil, an amphiphilic lipid, and a “nonionic polymer comprising at least one hydrophobic block and at least one hydrophilic block.” The specification states that amphiphilic lipids are also known as surfactants, emulsifiers, or surface agents (page 2) and that a wide variety of such compounds can be used in the claimed composition (see pages 10-36). The specification also states that nonionic polymers having the recited properties include “the products Aculyn 44 and Aculyn 46 from the company ROHM and HAAS.” Page 7.

The examiner rejected all of the pending claims as obvious in view of Cervantes and Casperson. The examiner noted that Cervantes teaches oil-in-water nanoemulsions meeting all the limitations of instant claim 1, except for the nonionic polymer. See the Examiner's Answer, pages 3-4. The examiner cited Casperson as “teach[ing] the use of polyether-polyurethane block copolymers [e.g., Aculyn 46] in hair

¹ “0.75 g AM” of Aculyn 46 versus “1% AM by weight” of Carbopol Ultrez; AM appears to be an abbreviation for “active material.”

care compositions for the enhanced rheological and conditioning benefits.” Id., page 4. The examiner concluded that “[i]t would have been obvious to one of ordinary skill in the art at the time of the invention to add a nonionic block polymer as taught by [Casperperson] to the nanoemulsion of [Cervantes] with a reasonable expectation of obtaining enhanced rheological and hair conditioning benefits.” Id.

We agree with the examiner that the cited references would have made obvious a nanoemulsion composition within the scope of claim 1. To summarize, Cervantes teaches an oil-in-water nanoemulsion meeting all of the limitations of instant claim 1 except for the inclusion of a nonionic polymer. See, e.g., column 1, lines 52-62. Such nanoemulsions are disclosed to be useful in, among other things, hair conditioners. See column 13, lines 6-13, and the working examples. Cervantes suggests that the disclosed nanoemulsions “may contain water-soluble or fat-soluble active agents having a cosmetic or dermatopharmaceutical activity”; e.g., thickeners. See column 12, lines 15-17, 32, and 34-43.

Casperperson teaches a “two-part hair dye composition . . . that is mixed immediately before or at the time of application to the hair to form the final oxidative hair dye composition.” Page 4, lines 11-13. “After mixing, . . . the rheology of the resultant mixture is such that it is easily applied to hair, sets up rapidly and does not run or drip.” Page 4, lines 20-23. The disclosed composition “comprises a polyether polyurethane, preferably a nonionic polyether polyurethane.” Page 4, lines 24-25. “[T]he polyether polyurethane polymers utilized in the compositions . . . enhance the conditioning effects and thickening properties of the resultant hair dye composition so as to provide superior rheological and conditioning benefits to the user.” Pages 4-5. “A preferred polyether

polyurethane for use in the compositions . . . is commercially available from Rohm and Haas under the tradename Aculyn 46.” Page 5, lines 5-10.

We agree with the examiner that, based on these disclosures, a person of ordinary skill in the art would have found it obvious to modify the nanoemulsion composition taught by Cervantes by including in it the Aculyn 46 nonionic polymer disclosed by Casperson. Motivation to so modify Cervantes’ composition is provided by Cervantes’ suggestion to include a thickener in the nanoemulsion composition, together with Casperson’s teaching that Aculyn 46 “provide[s] superior rheological and conditioning benefits” in a composition to be applied to hair.

Appellants argue that those skilled in the art would not have been motivated to combine the references because Cervantes’ composition is an oil-in-water emulsion while Casperson’s composition is aqueous. Appellants note that Cervantes suggests using Carbopol, among other things, as a thickener in the disclosed nanoemulsions, Appeal Brief, page 8, but the instant specification provides an example in which replacing Aculyn 46 with Carbopol Ultrez results in “a composition which is not thickened, not transparent . . . and not stable on storage.” Appeal Brief, page 8.

Appellants argue that

while it is clear that [Casperson] contemplates the use of polyether-polyurethane polymers as thickeners, the polymers are for use in aqueous systems. See page 6, line 23. . . . There is absolutely no suggestion of using these polymers in emulsions, nanoemulsions, or in the presence of oil, as is claimed. . . . [T]here is no suggestion or motivation that such polymers would be viable with the oil-in-water emulsions of the [Cervantes] reference. . . . Nor would one have expected that the polyether-polyurethane would function successfully in that different environment.

Appeal Brief, pages 8-9.

In response to this argument, the examiner “note[d] that both compositions have [a] continuous water phase. An oil-in-water nanoemulsion is an aqueous dispersion of the nanoparticles of oil [globules]. See [Cervantes], col. 1, lines 52-62.” Examiner’s Answer, page 6. The examiner argues that “[t]here is nothing nonobvious about using a thickener for a water solution such as the hair dye of [Casperson] to modify the viscosity of the water phase or the [Cervantes] oil-in-water nanoemulsion.” Id.

We agree with the examiner that the references support a prima facie case of obviousness. Cervantes suggests that any of a variety of known thickeners could be used to thicken the disclosed oil-in-water nanoemulsion, and the examiner has provided a reasonable explanation for why those skilled in the art would expect that a thickener used in aqueous compositions would also be useful for an oil-in-water nanoemulsion. Based on Cervantes’ disclosure, and given the examiner’s explanation of how the cited references would have been viewed by those skilled in the art, we agree with the examiner that the skilled artisan would have found it obvious to use Casperson’s thickener in Cervantes’ composition, with a reasonable expectation of success. See In re O’Farrell, 853 F.2d 894, 903-04, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988) (“Obviousness does not require absolute predictability of success. . . . For obviousness under § 103, all that is required is a reasonable expectation of success.”).

It is true that the specification provides evidence that one thickener (Carbopol) works worse than would have been expected based on the prior art disclosures. However, Appellants have provided no evidence that Carbopol is representative of the other thickeners suggested by Cervantes or is representative of thickeners used in aqueous compositions. Nor have Appellants provided evidence to show that those

skilled in the art generally expected thickeners for aqueous composition to be inapplicable to oil-in-water emulsions or oil-in-water nanoemulsions. Thus, the evidence of record does not support Appellants' argument that those skilled in the art would not have been motivated to combine Casperson with Cervantes because they would not have expected Aculyn 46 to thicken an oil-in-water nanoemulsion.

The references cited by the examiner support a prima facie case of obviousness with respect to claim 1, which has not been rebutted by the examiner. We affirm the rejection of claim 1. Claims 2-9, 11-21, 23-25, 30, 33, 50, 51, and 55-69 fall with claim 1.

2. Claims 70-72 and 75-84

Appellants split claims 70-72 and 75-84 into four groups and argue them separately. The arguments are substantially the same, however, so to avoid repetition we will address them together.

Claim 71, 75, 79, and 80 are representative of Appellants' claim groupings:

- Claim 71 is directed to a "composition for caring for a keratin material" (including hair), comprising the same nanoemulsion as defined by claim 1.
- Claim 75 is directed to a "non-therapeutic care process for a keratin material comprising applying to said keratin material" the nanoemulsion defined by claim 1.
- Claim 79 is directed to a "process for thickening oil-in-water nanoemulsions comprising including at least one nonionic polymer comprising at least one hydrophobic block and at least one hydrophilic block" in the nanoemulsion, along with an oil and an amphiphilic lipid.
- Claim 80 is directed to the same nanoemulsion as defined by claim 1, except that in claim 80, the nanoemulsion is said to contain "at least one oily phase" instead of "at least one oil."

Since the references relied on by the examiner suggest a hair conditioning composition comprising the ingredients in claim 1, the references also support a prima facie case of obviousness with respect to claims 71, 75, 79, and 80. That is, they

suggest a “composition for caring for a keratin material” (i.e., a hair conditioning composition), a “non-therapeutic care process for a keratin material” (i.e., conditioning hair by applying the composition to hair), a “process for thickening oil-in-water nanoemulsions” (i.e., adding Casperson’s Aculyn 46 to Cervantes’ composition as a thickener), and a nanoemulsion containing an oily phase (which does not appear to differ in substance from a composition containing an oil).

With regard to claims 70-72, Appellants argue that “neither the [Cervantes] reference nor [Casperson] teach the claimed nanoemulsion, let alone for the purposes recited in claims 70-72.” Appeal Brief, page 11. With regard to claims 75-78, Appellants argue that “neither the [Cervantes] reference nor [Casperson] teach the claimed nanoemulsion, let alone for the purposes recited in claims 75-78.” Appeal Brief, page 13. With regard to claim 79, Appellants argue that “neither the [Cervantes] reference nor [Casperson] teach the claimed nanoemulsion and thus cannot teach a process for thickening such nanoemulsions.” Appeal Brief, page 14. With regard to claims 80-84, Appellants argue that “there is no teaching or suggestion for the elements set forth in claims 80-84. Indeed, as the combination of references do not teach or suggest the nanoemulsion of claim 80, it certainly does not teach or suggest [dependent] claims 81-84.” Appeal Brief, page 15.

None of these arguments are persuasive. While it is true that neither reference by itself teaches the claimed composition, the combined references would have suggested it to those of skill in the art, and also would have suggested the additional limitations in claims 71, 75, 79, and 80. The rejection of claims 71, 75, 79, and 80 is affirmed. Claims 70, 72, 76-78, and 81-84 fall with claims 71, 75, 79, and 80.

3. Claims 73 and 74

Claim 73 is representative of Appellants' third group of claims. Claim 73 is directed to a "cosmetic make up composition for a keratin material" comprising the same nanoemulsion as defined by claim 1. Cervantes discloses nanoemulsions comprising all of the ingredients recited in claim 73 except for the nonionic polymer. See column 1, lines 52-62. Cervantes discloses that the nanoemulsion "compositions may also be make-up compositions such as foundations, tinted day creams, mascaras, blushers, eyeshadows, lip compositions, and nail varnishes." Column 13, lines 25-27.

Cervantes also suggests that the disclosed compositions "may contain water-soluble or fat-soluble active agents having a cosmetic or dermatopharmaceutical activity"; e.g., thickeners. See column 12, lines 15-17, 32, and 34-43. Casperson teaches Aculyn 46 as a thickener in a hair dye composition. Casperson teaches that Aculyn 46 "provide[s] superior rheological . . . benefits" (page 4, line 30) "such that it is easily applied to hair" (page 1, lines 22-23).

Based on these disclosures, we agree with the examiner that the references would have suggested the composition of claim 73 to a person of ordinary skill in the art. For example, the skilled artisan would have found it obvious to add Casperson's Aculyn 46 to the nanoemulsion-containing mascara composition suggested by Cervantes, in order to provide a composition that could be easily applied to eyelashes.

Appellants argue that "neither the [Cervantes] reference nor [Casperson] teach the use of the compound as claimed in Claim 1 and certainly not for the purposes specified in Claims 73-74." Appeal Brief, page 12.

We disagree. For the reasons discussed above, we conclude that the cited references would have suggested the claimed composition to those of skill in the art, including the additional limitations of claim 73. We therefore affirm the rejection of claim 73. Claim 74 falls with claim 73.

Other Issues

A commonly assigned patent application (09/765,675) was recently the subject of another appeal to this board (Appeal No. 2004-0378). Most of the claims in the earlier appeal differ from the claims in this appeal because they are directed to nanoemulsions containing cationic, not nonionic, polymers. However, claim 78 of the '675 application appears to be identical to claim 80 of the instant application.

If the instant application is re-filed or subject to further prosecution, the examiner should review the pending claims in this application and in the '675 application. If any of the claims of the two applications are identical or not patentably distinct, a rejection for statutory double patenting or obviousness-type double patenting may be appropriate.

In addition, we note that the earlier appeal involving the '675 application did not contain a rejection based on the Cervantes and Casperson references applied in this case. We also note that, according to PALM, the '675 application is still pending before the examiner. The examiner may wish to review the rejections in the '675 application and consider whether the closest prior art has been applied to, e.g., claim 78 in that case.

Summary

The references cited by the examiner would have suggested the claimed compositions and methods to those of ordinary skill in the art. The rejection for obviousness is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED


Demetra J. Mills
Administrative Patent Judge


Eric Grimes
Administrative Patent Judge


Lora M. Green
Administrative Patent Judge

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